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# WHEN MANY DAVIDS COLLABORATE WITH ONE GOLIATH: HOW INTER-ORGANIZATIONAL NETWORKS (FAIL TO) MANAGE SIZE DIFFERENTIALS

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## **Abstract**

How do organizations of vastly different size collaborate in order to achieve a common goal? While this poses less of a problem when the network is orchestrated by a classic lead firm, in networks exhibiting a shared governance mode, where leadership responsibilities are more or less equally distributed, size differentials present a critical management challenge. In this paper, we contribute to the literature on coordination in and of inter-organizational arrangements by emphasizing the so far largely neglected role of size for managing close collaborative relationships. We study the case of Apprenticeship Network, a network that originally consisted of seven small and medium-sized enterprises, but which then accepted a very large multinational firm as a new member. By unpacking how the network coordinated its endeavor over time to achieve accountability, predictability, and a common understanding as critical conditions for effective coordination, we explore how coordination effectiveness may deteriorate and result in the failure of the collaborative effort. We pay special attention to the role of size in these processes, and we theorize how the strategic front- and back-staging of agreed-upon rules and norms facilitates the formation, maintenance, and deletion of a tie, thus producing important network dynamics.

**Keywords:** Organizational size; Inter-organizational networks and multi-partner alliances; Coordination; Network dynamics; Failure.

## INTRODUCTION

In 2011, Apprenticeship Network<sup>1</sup>, an inter-organizational arrangement of seven small and medium-sized enterprises (SMEs), formed about fifteen years ago in order to offer German-style apprenticeships in the United States (U.S.), announced the new membership of EnergyCorp, a large Multinational Corporation (MNC). Apprenticeship Network was known as a small, close-knit inter-organizational network of like-minded SMEs, supported by strong inter-personal ties and high levels of trust. Would this network of ‘Davids’ be able to collaborate successfully with this ‘Goliath’, one of the 100 largest companies in the world as measured by revenue?

Existing research highlights a key trade-off that is involved for SMEs when collaborating with a large player: such collaboration promises access to some critical resources, yet there is the danger that the large player will misappropriate collectively created assets (Katila, Rosenberger and Eisenhardt, 2008). While inter-organizational networks and multi-partner alliances always face a key social dilemma around the tension of cooperation and competition (Zeng and Chen, 2003), size and power differentials create a unique ‘sharks dilemma.’ In fact, many partnerships between large and small firms involve the big partner acting as a strategic center or hub firm (Jarillo, 1988), which may even go so far that the unequal distribution of resources is institutionalized (see Dhanaraj and Parkhe, 2006). For example, in innovation networks hub firms “tend to use their leading role to negotiate the distribution of value deriving from the collective innovation output in a way that maximizes their own benefit” (Giudici, Reinmoeller and Ravasi, 2017: 6). In cases of shared governance, however, where rights and responsibilities are distributed equally (Provan and Kenis, 2008), the ‘sharks dilemma’ may pose a critical management challenge, because here misappropriation runs counter to the fundamental understanding of the partnership.

We study Apprenticeship Network as a network exhibiting shared governance and we respond to a recent call by Josefy et al. (2015: 770), who encourage “future research [to]

incorporate size as an important element affecting the collaborations between firms.” Our study sheds light on the role of size differentials for coordinating efforts toward achieving a common goal (Gulati, Wohlgezogen and Zhelyazkov, 2012; Okhuysen and Bechky, 2009). We contribute to a better understanding of the influence of organizational size and several of its correlates (e.g., reputation, power) for the dynamics in and of inter-organizational networks and multi-partner alliances by uncovering how ties are formed, maintained, and deleted. Hereby, we help to overcome a key weakness of much existing literature in that “most of our theorizing often suggests a curiously static and passive approach on the part of [the] actors with respect to the network itself” (Ahuja, Soda and Zaheer, 2012: 442). Paying special attention to network agency, we trace how Apprenticeship Network strategically front- and back-staged (see Goffman, 1959) agreed-upon rules and norms in order to facilitate the formation, maintenance, and deletion of the new tie to EnergyCorp. By this we mean, in line with previous management and organization research using this Goffmanian approach (Mair and Hehenberger, 2014; Manning, 2008; Ringel, 2018), that the other partner firms emphasized and directly referred to existing rules at the network level at certain times, while ignoring and downplaying the relevance of the same rules at other times. Engaging in these coordinative practices, Apprenticeship Network managed the partnership in light of significant conflicts and tensions related to the size differentials, albeit at the cost of EnergyCorp’s network exit.

We contribute to the literature on inter-organizational networks and multi-partner alliances in three key ways. First, we respond to recent calls to examine the role of organizational size in managing inter-organizational networks (Josefy *et al.*, 2015), in particular in relation to the role of size differentials for “the processes that account for the appearance and disappearance of ties” (Clegg *et al.*, 2016: 286). As such, we emphasize the dynamics in and of networks (Ahuja, Soda and Zaheer, 2012; Majchrzak, Jarvenpaa and Bagherzadeh, 2015). Second, we highlight how these dynamics are actually triggered and

driven by network members. Contributing to a better understanding of agency in and of networks (Tasselli, Kilduff and Menges, 2015), we show how partner firms leveraged formal network guidelines and informal norms at particular points in time in order to coordinate the network (Gulati, Wohlgezogen and Zhelyazkov, 2012). As such, a key contribution of our research is to shift the focus on coordination mechanisms and practices from the intra-organizational to the inter-organizational level (Okhuysen and Bechky, 2009). More specifically, we trace how Apprenticeship Network initially achieved accountability, predictability, and a common understanding at the network level, before the inherent tensions related to size differentials were moved to the forefront and resulted in the collapse of the collaborative effort. More broadly, our observation relates to previous arguments that processes of forming relationships may differ from those of maintaining them (Dahlander and McFarland, 2013). Here, we suggest that front-staging existing rules and norms is important in formation processes, while back-staging helps maintain the newly formed tie in light of fundamental tensions, at least temporarily.

Finally, we develop a process model of how inter-organizational networks (fail to) manage size differentials, arguing that this process involves the strategic front- and back-staging of key rules for the purpose of creating, activating, and, if necessary, de-activating or even deleting ties. Unlike previous research suggesting that coordinating may involve successful processes of rule adjusting and network learning (Doz, 1996; Gulati, Wohlgezogen and Zhelyazkov, 2012), we highlight that managing size differentials in inter-organizational networks may result in failure if formal and informal rules are not adjusted.

### **COORDINATING INTER-ORGANIZATIONAL NETWORKS: A PROCESS VIEW**

An inter-organizational network can be defined “as a group of three or more organizations connected in ways that facilitate achievement of a common goal” (Provan, Fish and Sydow, 2007: 482). Such goals may be, for instance, cost savings with the help of (external) economies of scale, the avoidance of risks, the creation of relational advantages (Dyer and

Singh, 1998), or, as in our setting, the implementation of a certain (training) practice. One critical observation made by Clegg et al. (2016: 278) is that “[t]he network form of organization [...] lack[s] a legitimate organizational authority to resolve disputes that may arise during exchange”. This challenge is exacerbated in small-firm networks with a shared form of governance, where “it is the collectivity of partners themselves that make all the decisions and manage network activities” (Provan and Kenis, 2008: 235). Disputes may arise over key norms, rules, practices, and objectives of the network.

One still largely unresolved issue pertains to the question of how networks, under these conditions, coordinate their activities in practice, and in the process manage potential tensions and misfits, many of which are likely to emerge at particular times (De Rond and Bouchikhi, 2004; Sydow and Windeler, 1998), not least when (new) ties are created (Huxham and Vangen, 2005; Jarvenpaa and Välikangas, 2016). Gulati et al. (2012) emphasize that even networks involving organizations with perfectly aligned interests face coordination challenges in that mechanisms need to be set in place that ensure the effective coordination of tasks across partners. For example, Berends et al. (2011) point to the intricate dynamics of formal contracting and informal contacting in the process of coordinating collaboration across organizational boundaries. In a similar vein, Oliveira and Lumineau (2017) unpack how inter-organizational project networks are coordinated with the help of steering and connecting. More broadly, coordinating as an ongoing process involves mechanisms that help organize interdependent tasks of a set of actors (Faraj and Xiao, 2006). Correspondingly, Gulati et al. (2012: 537) define coordination in the inter-organizational context as “the deliberate and orderly alignment or adjustment of partners’ actions to achieve jointly determined goals.” We know significantly less about why and how this alignment and adjustment may fail, leading to partners missing the jointly determined goals. Rather, existing research examines how coordination in as well as across organizations is accomplished successfully by relying on

certain tools, such as plans or other types of artifacts (Okhuysen and Bechky, 2009), not least information systems (Gittell and Weiss, 2004).

Embracing coordination as a process (Jarzabkowski, Lê and Feldman, 2012), Okhuysen and Bechky (2009: 493) speak of coordination “as an ongoing accomplishment.” Focusing on how collective work is accomplished *within* organizations, Okhuysen and Bechky (2009) suggest that coordination mechanisms create three important conditions, which enable the necessary integration of various interdependent tasks and, hence, may also be relevant for inter-organizational coordination (see Gulati, Wohlgezogen and Zhelyazkov, 2012): accountability, predictability, and a common understanding. *Accountability* points to the question of who is responsible for a particular part of a certain task. *Predictability* refers to the shared idea of what parts belong to a particular task, and when these various parts occur in the process. The notion of a *common understanding* describes the phenomenon that (inter-) organizational actors need to develop a shared perspective on the various tasks involved in a particular kind of coordination.

Okhuysen and Bechky (2009) discuss the increasing importance of various inter-organizational relationships as one main direction for future research on coordination. In this study, we move in this direction and also advance our understanding of why coordination may lead to the breakdown of collaboration. We tackle this open research question by paying special attention to the role of size differentials for network coordination processes.

## **COLLABORATING IN INTER-ORGANIZATIONAL NETWORKS:**

### **THE (NEGLECTED) ROLE OF ORGANIZATIONAL SIZE**

Inter-organizational arrangements often involve dissimilar organizations, for example small biotech start-ups and big pharmaceutical companies (Hagedoorn and Roijakkers, 2002; Powell, Koput and Smith-Doerr, 1996; Vlaisavljevic, Cabello-Medina and Pérez-Luño, 2016). Many of these arrangements are likely to qualify as ‘strategic networks’ (Jarillo, 1988) as they are founded and orchestrated by large firms. Empirical research shows that relationships



between heterogeneous organizations help facilitate access to valuable information or legitimacy, and thus generate important social capital (Koka and Prescott, 2002). For example, collaborating with large players may be beneficial for small organizations in that their association with well-known and reputable organizations can signal legitimacy to key stakeholders (Podolny, 1993). At the same time, significant differences in size—and resources, power, reputation or similar correlates of organizational size—pose unique challenges, not least to balancing individual needs and goals with those of the network as a whole. Also, there is the inherent danger of misappropriation as a consequence of such differentials (Katila, Rosenberger and Eisenhardt, 2008). More broadly, a recent review discussing promising research opportunities in the area of inter-organizational relationships makes the observation that “differences between a small firm and a large firm influence the ways in which each firm perceives dependence, uncertainty, and risk” (Lumineau and Oliveira, 2018: 447).

In this paper, we address a key research frontier by exploring how organizational size differentials are managed through coordination practices in an inter-organizational network. In line with existing research, we conceptualize organizational size as it relates to revenue and employees (Camisón-Zornoza *et al.*, 2004; Josefy *et al.*, 2015). More specifically, we examine how an existing network of SMEs formed, maintained, and eventually deleted a tie to a very large firm. Networks consisting of SMEs are known to be effective in many cases, not least because of high levels of trust and reciprocity (Perrow, 1993; Podolny and Page, 1998). Including a large organization may undermine the effectiveness of these coordinative mechanisms. This should be true in particular for networks coordinated by using a shared governance mode. Here, we suspect organizational size to have multifaceted implications, in addition to potentially reshaping power dynamics in decision-making processes. For example, the heightened visibility of the large organization may result in an unequal distribution of attention, which can be perceived as unjust. Differences in attention from external audiences

may be in conflict with, and ultimately undermine, some key principles of shared governance. Furthermore, the higher level of bureaucracy in big firms may create unique challenges in the process of collaborating with small-firm partner organizations (Doz, 1996), which are said to be more flexible and agile (see Blau and Schoenherr, 1971; Mintzberg, 1979). For example, in the context of project alliances Bouncken (2011) finds a differentiating effect of more formal practices on the innovation performance of small and large firms.

Leveraging the intriguing case setting of Apprenticeship Network, we seek to provide unique insights into how inter-organizational relationships are coordinated in practice, how dynamics in and of networks and alliances are driven by network agency, and why collaboration between organizations of vastly different sizes may fail.

## **RESEARCH DESIGN**

### **Case Selection and Setting**

We use a longitudinal, qualitative single case study research design. Qualitative single case studies are particularly appropriate for theory development and extension (Eisenhardt, 1989). We opted for this approach because we still know surprisingly little about how inter-organizational networks are coordinated (Gulati, Wohlgezogen and Zhelyazkov, 2012; Provan, Fish and Sydow, 2007), in particular with regard to size differentials between network members. Our aim is to help build process theory on how networks (fail to) manage size differentials, as they form, (at least temporarily) maintain, and delete ties. For this purpose, we selected Apprenticeship Network as a critical case (Eisenhardt and Graebner, 2007) of a network that had to manage significant size differentials between existing SME members and EnergyCorp, which entered the network as a new member.

Apprenticeship Network is located in the U.S. It was created in 1995 by the foreign subsidiaries of two SMEs from Continental Europe. There are two U.S. firms in the network: Partner Firm 1 and Partner Firm 6. The other members are foreign subsidiaries. The main objective of Apprenticeship Network was—and still is—to organize apprenticeship training

collaboratively. Apprenticeship training involves the combination of theoretical instruction, typically administered at a local college, and practical experience within a firm. Through Apprenticeship Network, partner firms seek to build a sustainable pipeline of skilled workers, thereby acquiring and developing relevant human capital (see Brymer, Molloy and Gilbert, 2014). In fact, members of Apprenticeship Network recruit some of their most highly qualified skilled workers through the program. These workers manage complex production processes, and they thus play a critical role in sustaining the competitiveness of the member firms. As such, participating in Apprenticeship Network constitutes an important part of the strategic talent management of the member companies (see Collings and Mellahi, 2009). In the winter of 2016 Apprenticeship Network had 50 active apprentices in its four-year mechatronics program.

Apprenticeship Network involves a Representing Partner Firm (RPF). Unlike a classic hub or lead firm or a strategic center, the RPF does not orchestrate the network (Paquin and Howard-Grenville, 2013). Rather, it represents the network to outside groups of stakeholders, such as interested students and parents. Other than that, the RPF has the same rights and responsibilities as the other network members. As such, its role is in line with the shared governance mode of Apprenticeship Network. For example, key decisions are made using a one member, one vote system.

The main reason why EnergyCorp applied for membership was to leverage established routines of marketing, recruiting, and administering apprenticeship. Apprenticeship Network has developed such routines and pools resources by collaborating in student recruitment, curriculum development and implementation, as well as marketing activities. In quarterly network meetings, representatives from partner firms meet to discuss and decide on all relevant network activities, as is typical of shared governance (Provan and Kenis, 2008). The network members have agreed on a set of guidelines, such as the formal rule that the individual member firms do not recruit for themselves but rather for the network as a whole.

Similarly, there are strong norms governing the network, such as the informal rule that network members abstain from actively poaching each other's apprentices or skilled workers. Also, Apprenticeship Network cooperates with additional organizations as a separate entity: it acts as a single collective actor vis-à-vis the local community college, which provides the theoretical instruction, the State Department of Labor, which issues journeyman certificates, and local high schools, which feed students into the program.

Apprenticeship Network has been and continues to be very successful at offering apprenticeships: for one, the partner companies report that the network yields highly-skilled workers needed for high-tech manufacturing processes; furthermore, the network has become increasingly visible in the region and beyond. As we explore in more detail below, this heightened visibility was a direct result of EnergyCorp joining the network. For example, soon after EnergyCorp's entry, partner organizations of Apprenticeship Network were mentioned in a speech by former President Obama. In 2015, the network decided to form a non-profit organization in order to monetize from the status it has attained in the field of workforce training. This consulting arm offers services to companies interested in developing similar partnership-based models.<sup>2</sup> The income generated through these activities is funneled back to Apprenticeship Network and helps finance the program. Representatives of the network offer consulting services all over the U.S., and they have been invited to numerous panels and discussions in Washington D.C. to share their experiences.

EnergyCorp, headquartered in Germany, is one of the biggest companies in the world, as measured by revenue and its number of employees. It has many operations in the U.S., and one of those foreign operations joined Apprenticeship Network in 2011 to become its eighth member. Tracing how Apprenticeship Network formed, (temporarily) maintained, and eventually deleted its tie to EnergyCorp, we seek to leverage this intriguing research setting to push our understanding of coordination in and of networks, how network agency drives network dynamics, and how these processes may result in collaboration failure.

## **Data Collection and Analysis**

This paper is linked to a larger research project on the transfer of practices in organizations and networks (Fortwengel, 2017; Fortwengel and Jackson, 2016). Our primary data source is interview material gathered in the period from 2012 through to 2016. In total, the first author has spent almost ten months in the U.S., in close proximity to the network partners, enabling easy field access. Concluding data collection is a critical step in the research process (Pettigrew, 1990). We decided to discontinue data collection in the winter of 2016 because by then we were able to track a complete cycle of the formation and deletion of an important tie in an inter-organizational network. In our research design the key event—EnergyCorp’s network exit in 2014—is placed in the middle of our longitudinal study spanning five years.

Our guiding interview questions aimed at collecting rich qualitative data on how and why the network decided to accept EnergyCorp as a new member (tie formation), how coordination was practiced and evolved as a result of this (tie maintenance), and how the network failed to manage the critical size differentials (tie deletion). When we were not ‘in the field,’ we maintained contact with key representatives of the member organizations in order to trace the real-time development of Apprenticeship Network. Over the years, for example, the first author received numerous emails that had been sent to an email list including representatives of the participating organizations and contained information on the latest developments in the network.

For this paper, we draw on 25 semi-structured interviews with respondents from all member companies of Apprenticeship Network as well as organizations they collaborate with in offering their program: the local community college, a high school, and the State Department of Labor. By collecting data from all network partners we circumvent a common blind spot in the literature, which “involves researching one party but drawing conclusions concerning the relationship between two or more organizations” (Lumineau and Oliveira, 2018: 444). Some respondents were interviewed multiple times, such as two training

managers responsible for EnergyCorp’s apprenticeship program, and in particular the RPF representative who alone was interviewed four times. All interviews were tape-recorded and transcribed verbatim. In total, we collected almost 29 hours of interview material. Table 1 below offers an overview of our interview data.

**Table 1:** Interview data.

No	ID	Organization	Respondent	Year	Duration (minutes)
1	RPF_1	Representing Partner Firm	Training manager	2012	71
2	RPF_2	Representing Partner Firm	Training manager	2013	89
3	RPF_3	Representing Partner Firm	Training manager	2015	88
4	RPF_4	Representing Partner Firm	Training manager	2016	71
5	PF1_1	Partner Firm 1	President	2013	110
6	PF2_1	Partner Firm 2	CEO	2013	49
7	PF2_2	Partner Firm 2	Apprenticeship trainer	2015	46
8	PF3_1	Partner Firm 3	Apprenticeship coordinator	2013	90
9	PF3_2	Partner Firm 3	Vice President	2015	71
10	PF4_1	Partner Firm 4	President	2013	60
11	PF4_2	Partner Firm 4	President	2015	67
12	PF5_1	Partner Firm 5	HR manager	2013	47
13	PF6-1	Partner Firm 6	Training manager	2013	36
14	EC-1_1	EnergyCorp	Training manager A	2012	61
15	EC-1_2	EnergyCorp	Training manager A	2013	58
16	EC-1_3	EnergyCorp	Training manager A	2015	67
17	EC-2_1	EnergyCorp	Training manager B	2015	78
18	EC-2_2	EnergyCorp	Training manager B	2016	71
19	EC-3_1	EnergyCorp	Director	2012	35
20	PO1_1	Partner Organization 1	Apprenticeship consultant	2013	83
21	PO1_2	Partner Organization 1	Apprenticeship consultant	2015	49
22	PO2_1	Partner Organization 2	Dean A	2012	155
23	PO2_2	Partner Organization 2	Instructor A	2013	46
24	PO2_3	Partner Organization 2	Dean B, Instructor B, Coordinator A, Coordinator B (multiple respondents in one interview, similar to a focus group setting)	2015	55
25	PO3_1	Partner Organization 3	Career coordinator	2013	64

Interviews provide rich, in-depth data on the underlying processes and practices of a particular empirical phenomenon, such as network dynamics (Majchrzak, Jarvenpaa and Bagherzadeh, 2015). However, interviews are known to suffer from certain inherent weaknesses, such as the danger of retrospective sensemaking (Eisenhardt and Graebner, 2007). We triangulated data in order to correct these biases. For this purpose, we not only interviewed representatives from the whole network, including its partner organizations, assuming that not all interviewees would engage in the same retrospective sensemaking. Furthermore, we collected rich archival information. This includes curricula, training plans, and network guidelines, which emerged as one important tool for Apprenticeship Network to manage the relationship with EnergyCorp. We also collected memos from Apprenticeship Network's quarterly meetings. These offer important insight into how quarterly meetings are run, how decisions are made, and how the network sustains or possibly changes its coordination and governance. Our case study database includes 26 relevant archival documents, totaling up to more than 250 pages of text. Finally, the first author participated in three summits, each lasting a full day, where representatives from Apprenticeship Network member organizations gave presentations and engaged in roundtable discussions to share their experience, not least in terms of managing the entry of EnergyCorp as a very large player.

Data analysis involved three main steps and was facilitated by the use of MAXQDA as a software tool for qualitative analysis. First, we ordered our case material chronologically to temporally bracket (Langley, 1999) the development of Apprenticeship Network. Here, we structured the development to cover the exploration, formation, (temporary) maintenance, and deletion of the tie to EnergyCorp. In a second step, we mapped the processes and activities we observed in our data to the evolvement of the practical coordination in and of the network. Here, we leveraged established concepts of coordination conditions as they have been developed in the literature; we thus traced how the network aimed to create and sustain accountability, predictability, and a common understanding (Okhuysen and Bechky, 2009). In

a third and final step of data analysis, we linked this back to the temporal sequencing, in order to facilitate theory extension and development. Here, we related practical coordination to the formation, maintenance, and deletion of the tie. At this stage in the data analysis process we realized that Apprenticeship Network behaved differently over time with regard to the previously agreed-upon rules and norms. We use the concepts of front- and back-staging to conceptualize these different approaches, and we leverage them to explain the process outcomes of forming, (temporarily) maintaining, and eventually deleting the tie. Building on this, we develop a conceptual process model of how inter-organizational networks (fail to) manage size differentials, and we compare and contrast the pathway of Apprenticeship Network to the alternative discussed in the literature, involving network learning and mutual adaptation (e.g., Doz, 1996).

### **FINDINGS: HOW APPRENTICESHIP NETWORK FAILED TO MANAGE COLLABORATING WITH ENERGYCORP**

In this section, we trace how Apprenticeship Network explored, formed, (temporarily) maintained, and finally deleted its tie to EnergyCorp. An overarching theme is the management of collaboration in light of significant size differentials. Table 2 below illustrates these differentials by comparing the number of employees of the partner firms at the level of the operation actively participating in Apprenticeship Network at the time of EnergyCorp's entry. Comparing the number of employees globally illustrates even starker size differences. For example, Partner Firm 1 had only 22 employees globally, whereas EnergyCorp itself had about 80,000 employees globally, and the conglomerate of which it is a part had about 400,000.

**Table 2:** Size differentials in Apprenticeship Network.

<b>Network members in 2011</b>	<b>Size (Number of employees at operation)</b>
Representing Partner Firm	300



Partner Firm 1	22
Partner Firm 2	89
Partner Firm 3	92
Partner Firm 4	23
Partner Firm 5*	ca. 200
Partner Firm 6**	600
EnergyCorp	1,500

\* Partner Firm 5 left Apprenticeship Network to form a new network closer to its location.

\*\* During our observation period, Partner Firm 6 was not centrally involved in Apprenticeship Network.

### **Time 0: Exploring Tie Formation (2010)**

Already at the stage when Apprenticeship Network was exploring the formation of a new tie to EnergyCorp, the striking size differential between the existing members and EnergyCorp played an important role:

“They asked me about EnergyCorp, and I said I don’t have a problem with them coming in. ‘Well, they are a big company.’ I said, I understand, but what good does it do to have them on the outside and against us trying to do the same thing? We might as well find out who they are and get to know the people and at least establish a relationship. They are going to start an apprenticeship program, one way or another. So why not be friends?” (Interview ID PF1\_1).

Interestingly, EnergyCorp itself was aware of the tension arising from the dissimilar organizational sizes:

“In the beginning, Apprenticeship Network was really afraid that we were the biggest fish in their pond and that we would take over” (EC-1\_3).

Existing network members feared that EnergyCorp as ‘biggest fish’ would tilt the balance. As Knoben et al. (Knoben, Oerlemans and Rutten, 2006: 400) suggest, “the entry of an organization with a good reputation and high knowledge levels into the network [...] might lead to the restructuring of the network”. Apprenticeship Network members were aware of the threat that EnergyCorp posed as a potentially very powerful organization:

“I have to say, we were all a bit cautious because we knew how big EnergyCorp was. And we just said, we can’t allow for EnergyCorp to take over the program” (PF3\_2).

At the end of a long and controversial discussion at the network level, the members collectively voted for the inclusion of EnergyCorp, largely because they hoped for positive spillover effects for the network. These positive effects for the network as a whole soon materialized:

“[Metropolitan school system] is one of the biggest school districts in the U.S.. And we have had problems getting access for years, and EnergyCorp was not even three weeks with us, and all doors were open to us” (RPF\_1).

Similarly, during one of the summits attended by the first author a representative from Partner Firm 3 explained the key reason for accepting EnergyCorp:

“EnergyCorp speaks, people listen. [...] That really helped us to get on the map” (PF3 Representative (Vice President), Observation Memo).

‘To get on the map’ is important because Apprenticeship Network needs to be visible in order to attract qualified students for its apprenticeship program. From the perspective of existing members, accepting EnergyCorp’s request for membership was therefore motivated by the prospect of benefitting from this firm’s reputation and visibility. From the perspective of EnergyCorp, joining Apprenticeship Network was mainly motivated by trying to benefit from the existing momentum the network had enjoyed:

“We looked at what they had, it fit our need. So why recreate the wheel? The thing is here, they have started to get some momentum” (EC-3\_1).

A key observation regarding *Time 0* is that network members were acutely aware of the challenges created by EnergyCorp’s large size compared to existing members. In the following, we map how Apprenticeship Network managed to prevent EnergyCorp from ‘taking over’ the program, albeit at the expense of losing this partner later on. We focus on how the network coordinated its collaborative endeavor to achieve accountability, predictability, and a common understanding.

## Time 1: Forming the Tie (2011-2012)

During the period of tie formation, Apprenticeship Network ensured that EnergyCorp was very aware of existing network rules and norms. For example, Apprenticeship Network has self-designed network guidelines. These ‘Guidelines for Partners’ state:

“The Apprenticeship Network is a very special partnership. The companies in the Apprenticeship Network commit to the purpose, value (including financial), ethics, and integrity of an Apprenticeship program” (Apprenticeship Network Guidelines).

Not least in order to enable such a close and ‘very special’ partnership, Apprenticeship Network is careful to recruit only firms that are not direct competitors. While all partner firms are in the manufacturing sector and therefore have similar skill and training needs, they do not directly compete for customers. EnergyCorp subscribed to this important norm:

“And none of us compete. We all make uniquely different things. And I think that is really helpful, too. I think if you had a competitiveness issue, that would make it very difficult” (EC-1\_2).

More broadly, EnergyCorp committed to the existing rules as laid out in the guidelines, and the underlying norms and values. For example, in terms of *accountability*, EnergyCorp accepted the shared governance mode involving a designated RPF, whose role differed, and continues to differ, from that of the other members in that it represents Apprenticeship Network to outsiders, including interested students, colleges, and the wider public. Similarly, in terms of *predictability*, EnergyCorp accepted critical existing routines, such as the recruiting routine. Here, Apprenticeship Network has the agreed-upon rule that member companies recruit for the network as a whole, as opposed to for individual companies.

Quarterly meetings serve as a key mechanism for governing the network, in particular with regard to producing and reproducing a *common understanding*. While these meetings are often led and moderated by RPF representatives, member firms share equal amounts of power

in terms of determining and voting on agenda points. Despite the significant size differentials as well as different degrees of experience in running an apprenticeship program,

Apprenticeship Network makes key decisions using a one member, one vote system:

“Every one of us has the right to vote. It’s not that we say, ‘we do this’. No, no, no, this is a partnership” (RPF\_2).

During *Time 1*, Apprenticeship Network was able to benefit from EnergyCorp’s membership in that this new member brought heightened visibility:<sup>3</sup>

“Actually, EnergyCorp has always had a good name. EnergyCorp is a big thing in the business, big company, with a big name behind it. And a lot of money. And here in the area, when you hear, ‘I have relatives that work for EnergyCorp making good money’, that was the top seller” (PF2\_2).

Going beyond the ‘area,’ having accepted EnergyCorp as a new member helped Apprenticeship Network to gain additional prominence on a national scale and secure further funding:

“We have opened so many doors. And EnergyCorp was important in this process. The name EnergyCorp is worth something in the world. We have received money, and I’m sure that EnergyCorp was one of the reasons why all of a sudden doors opened in Washington” (RPF\_4).

Also, after EnergyCorp had joined, Apprenticeship Network felt strongly that the network had now reached a good size in terms of partnering firms:

“8 companies in partnership, no additional partners needed” (Apprenticeship Network Meeting Minutes, Q1 2012).

Apprenticeship Network was thus successful initially in creating and sustaining the coordinative conditions of accountability, predictability, and a common understanding in light of EnergyCorp’s network entry. The process of tie formation involved the clear upfront communication of critical rules, norms, and values. While it became clear early on that collaborating despite significant size differentials poses many complex challenges, EnergyCorp accepted and followed existing network rules. In some cases, following network rules required EnergyCorp to develop quite creative solutions. For example, internal corporate policies of EnergyCorp prescribe that workers on the shop floor must be at least 18 years old.

However, the apprentices are often younger than that, in particular during their first couple of years in the program. Practical experience on the shop floor constitutes an integral part of the program offered by Apprenticeship Network, and in order to be able to offer its apprentices the practical training but still abide by the internal policies, EnergyCorp decided to hire its apprentices through a contract agency. This experience early on in the process illustrates the unique challenges created for inter-organizational networks and multi-partner alliances comprising members of vastly different sizes:

“So most of the companies in Apprenticeship Network were smaller, privately owned companies, so they can kind of make their own rules. EnergyCorp is not such a company. And so we were constantly challenged with company policy about, you know, age of your workers and all these things that EnergyCorp policy says, like you can’t have an 18 year old working in your factory” (EC-1\_3).

EnergyCorp was accepted as a new member only because it formally agreed to abide by existing formal and informal rules at the network level.

## **Time 2: Maintaining the Tie (2012-2014)**

The key observation we make with regard to *Time 2* is that in this time period Apprenticeship Network did not force EnergyCorp to abide by the rules, norms, and values of the network. Rather, maintaining the newly created tie was accomplished by turning a blind eye to EnergyCorp’s violations and breaches.

In terms of *accountability*, one key challenge in inter-organizational networks is related to the fact that, unlike within a single organization, authority and responsibility are much less clearly distributed and assigned. In the case of Apprenticeship Network, key tasks and responsibilities are distributed on a very ad-hoc basis:

“There are always things, for example, re-launching the website. These things are discussed in the meeting and most of the time someone just says, ‘OK, I’ll do that’. [...]. Or T-shirts, here the one from [Partner Firm 3] says, ‘OK, I’ll take that, I’ll organize that’” (PF2\_2).

As a large conglomerate with significant levels of bureaucracy, EnergyCorp is not used to such ad-hoc coordination and experienced challenges in assuring the implementation

of responsibilities as agreed in those meetings. In contrast, managers at the participating SMEs have more leeway:

“The advantage of smaller firms is flexibility” (RPF\_4).

At the same time, EnergyCorp’s membership had a positive effect on Apprenticeship Network in terms of visibility and attention:

“There was a time, in ’12, ’13—unbelievable! We couldn’t defend ourselves against all those requests anymore, from government, other states” (RPF\_4).

For a partnership-based network, inequities in terms of recognition and visibility can be problematic:

“Exactly this fear: they are so big, they do what they want. They are always in the media” (RPF\_4).

In this context, RPF played the role of smoothing over emerging irritations at the network level as a result of the attention EnergyCorp received, even though Apprenticeship Network had already been around for more than fifteen years:

“Some partners have to understand this, firms who have been members for ten, fifteen years. When EnergyCorp comes now and they only read about what EnergyCorp has done, I’ll get calls from them and they will ask ‘what have they done so far?’ And then I’ll say, ‘yes, that’s OK, stay calm’” (RPF\_1).

Notably, diverting attention away from the network toward EnergyCorp was not the intention of EnergyCorp, but rather an unintended consequence related to this organization being a Goliath:

“One other partner said, ‘we have been doing this for a long time, and nobody has ever paid attention, and now EnergyCorp steps on board and everybody wants to know how we are doing this.’ But that wasn’t really my intention” (EC-1\_3).

In terms of *predictability* the size differentials made coordination very difficult as well, not least in the area of pay. Apprenticeship Network has agreed on a harmonized, escalating pay scale throughout the program across partner firms, and it has also standardized the wage paid to graduates accepting full-time positions. This creates predictability for network partners as well as for current and interested students. It also helps minimize the

competition at the network level—a key challenge in networks and alliances (Sydow, Schüßler and Müller-Seitz, 2016: 21-24; Zeng and Chen, 2003). Here, however, one major challenge is that the Department of Labor regulation prescribes that an apprentice receives 85 per cent of the entry wage in the fourth and final year of training, but entry wages for regular employees are known to differ significantly between large companies and SMEs. In the context of Apprenticeship Network, one critical issue was that EnergyCorp as a big player had to either violate its internal policies and routines regarding pay and compensation, or the network guidelines, which stipulate the agreed-upon, harmonized (entry) wage level:

“It took some time before someone realized that we have a problem there” (PF3\_2).

However, it is important to note that during *Time 2* this problem was not addressed but rather ignored. Similarly, breaches that undermined the *common understanding* were not sanctioned. For example, Apprenticeship Network has agreed on a common curriculum teaching skills and competencies that are of use to all member firms. While member companies have firm-specific skill needs, as manufacturing companies they share a need for mechatronics skills. For this reason, Apprenticeship Network offers a mechatronics program. However, EnergyCorp questioned this shared understanding:

“One of the things that I noticed with our apprentices was that they were lacking high-level machining skills” (EC-2\_2).

In response to this perceived mismatch between skill requirements and the program offered by Apprenticeship Network, during one of the quarterly meetings EnergyCorp suggested creating a second route within Apprenticeship Network to recruit machinists and train them as part of a maintenance program. The other partner firms were not interested, however, and as a result this machinist track was created outside of Apprenticeship Network. Importantly, this is linked to size differences because maintenance is a more specialized program compared to mechatronics, which covers a broader set of more general competencies across sub-fields, particularly attractive for SMEs. Apprenticeship Network accepted

EnergyCorp's breach of the *common understanding* in this realm and at this point did not terminate collaboration. Apparently, maintaining the tie to EnergyCorp made it necessary to ignore or accept behavior deviating from key rules and norms of the network. For example, while the network guidelines clearly state that network members must guarantee "employment opportunities after graduation" (Apprenticeship Network Guidelines), the fact that EnergyCorp did not abide by this network rule was not sanctioned.

### **Time 3: Deleting the Tie (2014-2016)**

During *Time 3* network members changed their approach. They now stopped ignoring or accepting EnergyCorp's breaches of key network rules and norms. Once it became clear that EnergyCorp would not be able or willing to abide by these rules, Apprenticeship Network decided to delete the tie. In the context of this study interested in network coordination in light of dramatically different sizes, it is particularly illuminating that SME representatives frequently referred to the size of EnergyCorp when making sense of its behavior:

"It was challenging. There were meetings where I realized that they are doing things that they don't tell us. But we knew before we went there that this was going to be a problem. There is a point where big firms do what big firms do. They do what is good for business. They don't care what we do" (RPF\_4).

Member firms became particularly frustrated once they noticed that EnergyCorp had secretly deviated from the agreed-upon rule to harmonize the pay scale for apprentices across member firms:

"It has never been communicated what their pay scale was. They agreed to pay exactly the same, but they just didn't do it. We came to know this at some point, through the apprentices. And then we said, OK, if you can't do it or don't want to change that, you'll have to do it on your own. And that was the split-off" (RPF\_4).

Apprenticeship Network was determined to stick to its established and valued routines and practices, even at the expense of losing EnergyCorp and with it the increased visibility and heightened attention:



“Honestly, they had not really gotten a lot of recognition until EnergyCorp came on board. So they didn’t want us to leave. But then they weren’t willing to stretch either” (EC-1\_3).

During *Time 3*, and contrary to its behavior in *Time 2*, Apprenticeship Network put a lot of emphasis on the existing formal and informal rules:

“The doors aren’t locked. Everyone is allowed to go in and out, as long as they wish to do so. If you enter, then there are a couple of rules of the game, and these have to be followed, otherwise I’ll kick you out. And if you don’t like these rules, you are allowed to leave. I’m not keeping anyone” (PF4\_2).

This exit option was eventually chosen when Apprenticeship Network and EnergyCorp decided in 2014 to part ways. Interestingly, in the lead-up to the deletion of the tie Apprenticeship Network members made use of existing guidelines to remind EnergyCorp of the various rules and norms they had agreed to. Ensuring *accountability* in this phase thus took the form of communicating that network members felt strongly that it was EnergyCorp’s responsibility to change its policies, in order to accommodate existing network rules:

“If you have a corporate policy, then you have the problem, we don’t. [...] You can change and accept what we have as our guidelines or not” (RPF\_4).

Sustaining *predictability* involved similar moments of highlighting existing rules, for example with the help of meeting minutes. More specifically, the following excerpt illustrates how network members actively use minutes from past meetings to reproduce behavior:

“[...] [T]hey wanted to have a contract for the new apprentices. They said we have problems and if they have a contract they will need to pay us back [if they leave]. And then I said, well, meeting minutes from 2007, in front of them, because I knew exactly, we had made the decision [not to use such a contract], and then I just read to them the four sentences. OK” (RPF\_4).

Similarly, Apprenticeship Network leveraged the guidelines to remind every partner organization of the agreed-upon *common understanding* according to which the network’s target group for recruitment is high school students, and not veterans, as had been proposed by EnergyCorp. The following interview excerpt clearly indicates that this was accomplished during a network meeting by directly referring to the existing network guidelines:

“Every company, every organization has to have rules. Otherwise everyone does what they want to. And the guideline that we referred to then in the meeting was, our target group is high school kids and we can’t take care of every group in the world. [...] That is part of our contract, that is what we want” (RPF\_4).

Notably, Apprenticeship Network partner firms explicitly refer to the dramatic size differentials when explaining the deletion of the tie to EnergyCorp:

“They aren’t in our partnership anymore. That already explains what implications this had. It worked for a short, limited time, and then we parted ways. I saw the risk that this would happen, which is normal because of the constellation with the company sizes. RPF is the biggest company now in our partnership. But that is nothing compared to EnergyCorp” (PF4\_2).

In fact, RPF has only about 6,000 employees globally, and thus is a David compared to the Goliath EnergyCorp. Table 3 below provides an overview of how Apprenticeship Network coordinated its temporary collaboration with EnergyCorp. While *Time 1* involved the clear and direct communication of existing rules in order to ensure accountability, predictability, and a common understanding, *Time 2* was characterized by ignoring or even accepting deviations from these rules, in order to maintain the tie. Finally, *Time 3* involved Apprenticeship Network sanctioning EnergyCorp’s breaches, resulting in the deletion of the tie. Throughout the process, Apprenticeship Network engaged in significant network agency over the course of exploring, forming, maintaining, and deleting a tie. We find that the key mechanism of this network agency was the strategic front- or back-staging of the existing rules and norms.

**Table 3:** Coordinating for accountability, predictability, and a common understanding over time: The case of Apprenticeship Network.

	<b>Accountability</b>	<b>Predictability</b>	<b>Common understanding</b>
<b>Time 1</b>	<p><i>Shared governance mode with RPF:</i></p> <p>“One company has to manage administrative tasks, lead and grow the partnership” (Apprenticeship Network Presentation)</p>	<p><i>Common recruiting routine:</i></p> <p>“[...] [W]e go to different functions to tell people about Apprenticeship Network. We are just very familiar with each other’s companies, and that is part of the beauty of Apprenticeship Network, we are very close-knit” (PF1_1)</p>	<p><i>(Re-)producing a common understanding:</i></p> <p>“We have meetings. Every quarter we meet, whereby we all sit down together to talk about general topics: if there are other firms interested in joining, what the general themes are that concern the whole system, what we could</p>

			do better, if we should increase the wages—this all has to be coordinated” (PF2_2)
<b>Time 2</b>	<i>Ad-hoc vs. bureaucracy:</i> “I didn’t have to write a budget for this. Because if I write a budget, then there is an accountant who counts dollars. And counting dollars isn’t necessary for us” (PF4_2)	<i>Harmonized pay scale vs. firm scale:</i> “Possible dilemma: sticking to the company’s own pay scale system on the one hand and on the other hand ensuring to maintain the partnership agreements could cause a problem” (Apprenticeship Network Meeting Minutes, Q2 2013)	<i>Guaranteeing employment vs. job bidding routine:</i> “We didn’t want to say that we would guarantee them employment because we had the job bid system and we wanted our employees in the plant to also be eligible to apply for jobs” (EC-1_3)
<b>Time 3</b>	<i>Violating accountability:</i> “It was challenging. There were meetings where I realized that they are doing things that they don’t tell us. But we knew before we went there that this was going to be a problem. There is a point where big firms do what big firms do. They do what is good for business. They don’t care what we do” (RPF_4)	<i>Violating predictability:</i> “[...] [T]hey wanted to have a contract for the new apprentices. They said we have problems and if they have a contract they will need to pay us back [if they leave]. And then I said, well, meeting minutes from 2007, in front of them, because I knew exactly, we had made the decision [not to use such a contract], and then I just read to them the four sentences. OK” (RPF_4)	<i>Violating common understanding:</i> “It’s very straightforward. This is a partnership and the partnership has rules, behavioral rules, procedural rules. When a big company like EnergyCorp says we will follow them 100 per cent, then there is no problem. When EnergyCorp says could we perhaps change something there, then it’s also OK. But when the partners in a meeting say no, we’ll keep it as it is because it’s good, and when this partner then says, but that doesn’t work for me, then it’s not a partnership anymore. Straightforward” (PF4_2)

## DISCUSSION

In this paper, we leverage the intriguing case of Apprenticeship Network, an inter-organizational network of SMEs that accepted EnergyCorp, a large MNC, as a new member, to study how networks (fail to) manage collaboration in light of dramatic differences in organizational size. Based on rich longitudinal case material, we find that Apprenticeship Network formed, (temporarily) maintained, and eventually deleted its tie to EnergyCorp with the help of strategically front- or back-staging formal and informal network rules. Our data helps us to unpack how and why coordinating may result in the dismantling of collaboration. Here, we show that critical tensions and misfits related to size differentials posed a real threat

to the collaborative effort, but that ignoring or even accepting deviances from existing rules enabled at least temporary maintenance of the tie. Our study illustrates how network agency drives dynamics at the level of the network structure (Tasselli, Kilduff and Menges, 2015), and how accountability, predictability, and a common understanding (Okhuysen and Bechky, 2009) can be achieved to varying degrees over the course of inter-organizational coordination. In the case of Apprenticeship Network, the outcome of these processes is the exit of EnergyCorp, and the continuing existence of Apprenticeship Network as a ‘small-firm network’ (Perrow, 1993).

We contribute to existing literature in several ways. First, we respond to recent calls to explore the role of organizational size in general, and size differentials in particular, for inter-organizational networks and multi-partner alliances (Josefy *et al.*, 2015). Here, we complement previous work (Fortwengel, 2017) by unpacking how key tensions and misfits relate to size differentials. For example, we find that the more formalized policies and practices of EnergyCorp, typical of a large bureaucracy equipped with many standard procedures and ample resources (see Mintzberg, 1979), posed significant challenges for the members of Apprenticeship Network in their endeavor to collaborate sustainably with EnergyCorp. Gulati *et al.* (2012) emphasize that the incompatibility of activities originally assumed to be complementary may be one reason for coordination failures. We illustrate this observation by showing how size differentials that were deemed complementary turned out to be problematic. This relates to recent work showing how complementary resources and assets are co-created over time in networks and alliances (Deken *et al.*, 2018). In this context, we show how a network may fail to co-create complementary resources over the course of collaboration. The tensions we observe as a function of heterogeneity in size are characteristic of collaborative efforts between small and big firms in general (Katila, Rosenberger and Eisenhardt, 2008), but they acquire a particular quality and relevance in inter-organizational networks exhibiting a shared form of governance (Provan and Kenis, 2008). Our study thus

offers a powerful illustration of the limits of (close) collaboration between small and big firms. The case of Apprenticeship Network is illuminating and ironic, in that flexible SMEs are caught in inflexible network rules, and thus fail to accommodate the structural inflexibility of the large MNC.<sup>4</sup>

Second, we contribute to the literature on coordination by unpacking coordinative processes and practices in inter-organizational networks. This shifts the view on coordination as a practical accomplishment seeking accountability, predictability, and a common understanding from the intra- to the inter-organizational level (see Okhuysen and Bechky, 2009). While previous work explores network orchestrating by a hub firm or a strategic center (Bartelings *et al.*, 2017; Paquin and Howard-Grenville, 2013; Sydow and Windeler, 1998), we utilize our case setting involving a network exhibiting a shared mode of governance to show how this kind of network governance is particularly sensitive to size differences, and that coordinating entails a temporal dimension whereby forming, maintaining, and deleting a tie involve different practices (Dahlander and McFarland, 2013). Far beyond irritations and interruptions caused by the entry of a Goliath, this temporal dimension gives rise to special tensions and contradictions that have to be managed over time in order to sustain a network of this type, asking for a theoretical framework that is sensitive in these respects.

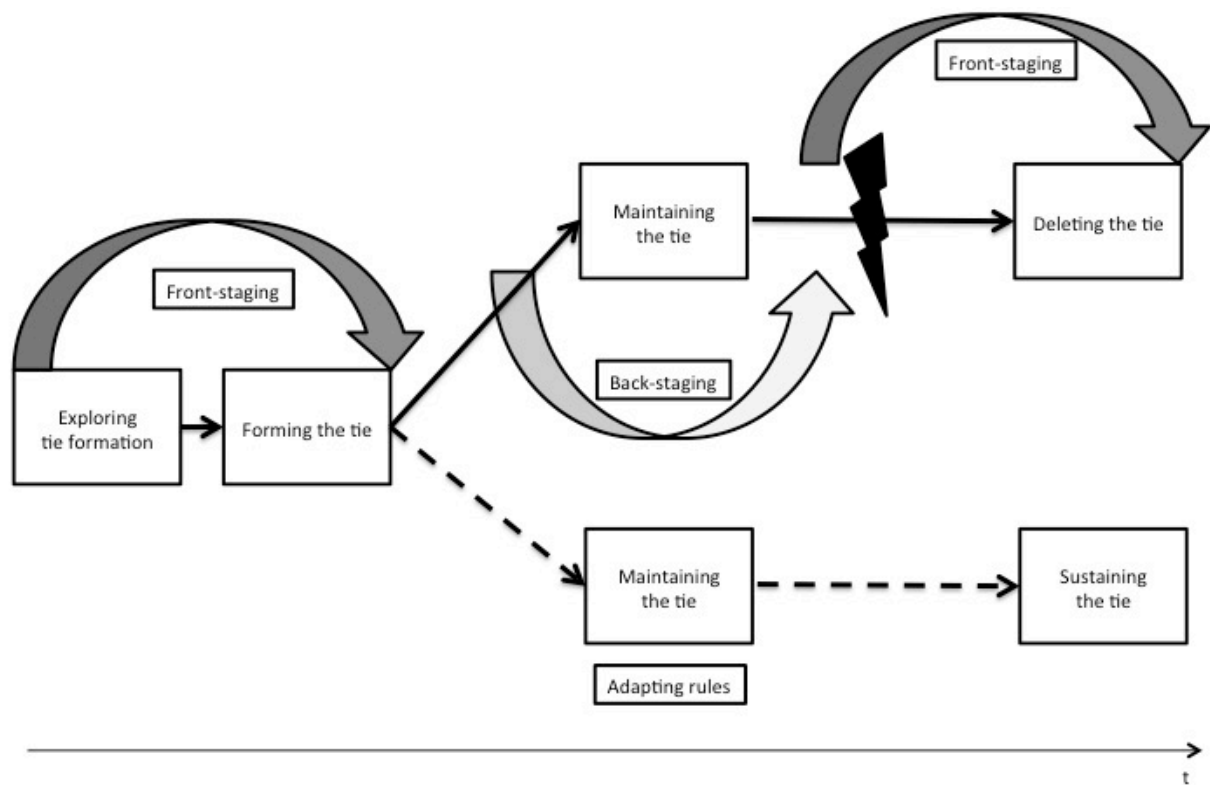
We link the network dynamics to the network agency performed by Apprenticeship Network (Ahuja, Soda and Zaheer, 2012; Majchrzak, Jarvenpaa and Bagherzadeh, 2015). Here, we make the observation that Apprenticeship Network strategically front- and back-staged agreed-upon rules and norms in order to coordinate its relationship with EnergyCorp. We thus fuse the question of the structure and design of networks and alliances, including their possible dynamics, with a process perspective on coordinating (Doz, 1996; Gulati, Wohlgezogen and Zhelyazkov, 2012), thereby offering novel insights into how networks (fail to) manage heterogeneity, here in the context of size differences. This also helps us explain

why the tensions related to size differentials had different implications over time, as a function of the varying coordinative practices Apprenticeship Network engaged in.

Notably, while (objectified) rules helped the SMEs to level the playing field vis-à-vis EnergyCorp as much larger and more powerful player, strict adherence to them ultimately led to the collapse of collaboration. Unlike the alternative pathway involving network learning (Knight and Pye, 2005), whereby partners adapt formal rules and norms to enable coordination, our case study highlights the (counterproductive) role of inert rules in governing collaboration. Contrary to what is often assumed in the literature (Cravens, Piercy and Shipp, 1996), this suggests a high degree of network inertia, produced, reproduced, and objectified by and through formal rules and procedures (Kim, Oh and Swaminathan, 2006). Our study is one of the few uncovering collaboration failure (see Ariño and De la Torre, 1998, as an early example), thus contributing to overcoming the inherent success bias in the literature.

As our third contribution, we put forward a process model of how inter-organizational networks (fail to) manage critical size differentials. In Figure 1 below, we depict the two main pathways toward managing size differentials in multi-partner alliances and inter-organizational networks. While the bottom pathway maps onto observations made in previous literature (e.g., Knight and Pye, 2005), we add the process at the top, inductively developed based on our rich empirical case material. This process involves the front- and back-staging of key rules, ultimately leading to the breakdown of collaboration. While the tensions between (inert) network rules and relevant differences in firm policy related to size differentials can be managed temporarily through back-staging, a sustainable solution enabling long-term collaboration appears to require rule adaption (see Doz, 1996).

**Figure 1:** How inter-organizational networks (fail to) manage size differentials.



Our theorizing has important managerial implications. For one, it draws attention to the particular practical challenges involved as Davids and Goliaths collaborate in networks and alliances. Furthermore, we highlight the importance of network learning and the adaptation of network rules, in order to enable co-evolution of firm-level and network-level coordination. Here, future research could explore the particular coordinative practices facilitating these adaptation processes at the intersection of intra- and inter-organizational levels.

Our study seeks to chart new territory by unpacking the role of size differentials for coordination processes in inter-organizational arrangements. As every empirical research, our study has some limitations. For example, our research is based on a single case study. This case was selected purposefully in order to extend existing and help build new theory on network dynamics (or the absence thereof), in particular in relation to the still largely open question regarding the role of organizational size (Josefy *et al.*, 2015). Future research could inquire further into the boundary conditions of our conceptual model. Here, we see promise in

comparing different inter-organizational networks, including different governance types (Provan and Kenis, 2008), and how they manage coordination in light of differing organizational size. For example, coordinating less embedded networks and alliances may pose particular challenges as partners try to match resources, not least in terms of size and its multifaceted implications (see Mitsuhashi and Min, 2016). In particular, we see promise in comparing our findings with research settings involving an inter-organizational network composed of many large organizations, which is then joined by a single SME. This configuration would likely pose distinct challenges in terms of coordinating and might reveal different strategies and practices of network agency in relation to front- and back-staging rules. For example, we would expect back-staging to play a lesser role in these kinds of settings, as a function of the dominance of large players used to bureaucratic procedures and routines (Mintzberg, 1979).

In a similar vein, future research could help uncover the possible role of network age or network stability. Our case setting is intriguing in the sense that EnergyCorp joined a network that had been around for some fifteen years, and had over this time developed strong formal and informal rules and norms, some of them codified in their ‘network guidelines.’ We find that these rules are instrumental in ensuring Apprenticeship Network’s effectiveness as a small-firm network composed of Davids, yet posed unique challenges in terms of collaborating with EnergyCorp as a Goliath. Thus, one possible boundary condition of our argument could be network age. If networks are rather new and do not (yet) possess strong norms and codified rules for coordination, collaboration between heterogeneous organizations in terms of size may be possible more readily, as inter-organizational coordination mechanisms may co-evolve and align with intra-organizational policies and practices over time.

Finally, we encourage future research to employ ethnographic methods to further our understanding of the motivation behind particular strategies of network agency (see Zilber,



2014). For example, while we identify front- and back-staging as key strategies utilized for coordinating Apprenticeship Network, our research design does not allow us to dig deeper into the actual processes and practices of switching between front- and back-staging at certain points in time. We hope that future research will help substantiate and extend knowledge on the role of organizational size for coordination practices and collaboration outcomes in a variety of inter-organizational settings.

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## FOOTNOTES

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<sup>1</sup> In order to protect the anonymity of the organizations comprising this network, as well as that of our interview respondents, we use pseudonyms throughout the text.

<sup>2</sup> Apprenticeship Network became a 501(c)(3) organization, which is a tax-exempt, non-profit organization in accordance with U.S. tax law.

<sup>3</sup> In fact, we ourselves became aware of Apprenticeship Network only after EnergyCorp had joined the partnership. In a way, our scholarly interest in the network illustrates nicely how EnergyCorp's entry into the network led to increased attention from external stakeholders and observers.

<sup>4</sup> We thank one of the anonymous *BJM* reviewers for helping us pinpoint this intriguing and ironic outcome of the coordination process.